

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicant(s):** John Trezza

**Serial No.:** To Be Assigned

**Group Art Unit:** To Be Assigned

**Filed:** September 30, 2003

**Examiner:** To Be Assigned

**For:** INTEGRATED ARRAYS OF MODULATORS AND LASERS ON ELECTRONICS

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Sir:

This Information Disclosure Statement is filed in accordance with 37 C.F.R. §§1.56, 1.97 and 1.98. The items listed on Form PTO-1449, a copy of which is enclosed, are made of record to assist the Patent and Trademark Office in its examination of this application. The Examiner is respectfully requested to fully consider the items and to independently ascertain their teaching.

1. ☐ For each of the following items listed on the enclosed copy of Form PTO-1449 that is not in the English language, an English language translation of that item or a portion thereof or a concise explanation of the relevance of that item is enclosed:  

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2. ☐ For each of the items listed on the enclosed copy of Form PTO-1449 that is not in the English language, a concise explanation of the relevance of that item is incorporated in the specification of the above-identified application.
3. ☒ All items listed on the enclosed copy of Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in application Serial No. 10/180,610, filed 6/26/2002 to which the present application claims the benefit of priority under 35 U.S.C. §120. Pursuant to 37 C.F.R. §1.98(d)(1) and (2) copies of such references need not be provided.


4. ☒ No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with:
- ☒ 37 C.F.R. §1.97(b)(1), within three months of the filing date of a national application other than a CPA; or
  - ☐ 37 C.F.R. §1.97(b)(2), within three months of the date of entry into the national stage as set forth in §1.491 in an international application; or
  - ☒ 37 C.F.R. §1.97(b)(3), before the mailing date of a first Office action on the merits; or
  - ☐ 37 C.F.R. §1.97(b)(4) before the mailing date of a first Office Action after the filing of an RCE under §1.114.
5. ☐ No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a Notice of Allowance (where there has been no prior final action), and is accompanied by one of the certifications pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below.
6. ☐ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a notice of allowance (where there has been no prior final action):
- ☐ A check in the amount of \$180.00 is enclosed in payment of the fee.
  - ☐ Charge the fee to Deposit Account No. 13-4500, Order No. \_\_\_\_\_.  
A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
7. ☐ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(d), after the mailing date of a final action or a notice of allowance, whichever comes first, but before payment of the issue fee, and is accompanied by:
- a. one of the certifications pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below; and
  - b. the fee due under 37 C.F.R. §1.17(p) which is paid as set forth in paragraph 11 below.
8. ☐ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with:
- a. ☐ 37 C.F.R. §1.313(b)(3) or §1.313(c)(1), after the issue fee has been paid and information cited in this Information Disclosure Statement may render at least one claim unpatentable and is accompanied by the attached Petition To Withdraw Application From Issue and fee pursuant to 37 C.F.R. §1.17(h);

- b. ☐ 37 C.F.R. §1.313(c)(2) or §1.313(c)(3), after the issue fee has been paid and information cited in this Information Disclosure Statement is to be considered in a Request for Continued Examination (RCE) or a Continuation application upon abandonment of the instant application and is accompanied by the attached Petition To Withdraw Application From Issue and fee pursuant to 37 C.F.R. §1.17(h).
- c. ☐ The fees due under 37 C.F.R. §§1.17(h) and 1.17(p) are paid as set forth in paragraph 11 below.
9. ☐ I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- ☐ I hereby certify that no item of information in the Information Disclosure Statement filed herewith was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
10. ☐ This document is accompanied by ☐ a Search Report ☐ Communication which was cited in a corresponding ☐ PCT or ☐ Foreign counterpart application
11. ☐ A check in the amount of \$ \_\_\_\_\_ is enclosed in payment of the fees due under 37 C.F.R. §§1.17(h) and 1.17(p).
- ☐ Charge the fees due under 37 C.F.R. §§1.17(h) and 1.17(p) to Deposit Account No. 13-4500, Order No. 4024-4020. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.
- ☒ **The Commissioner is hereby authorized to charge any additional fees which may be required for this Information Disclosure Statement, or credit any overpayment to Deposit Account No. 13-4500, Order No. 4024-4044US2. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.**

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

By:

  
Richard Straussman  
Registration No. 39,847

Dated: September 30, 2003


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- b. ☐ 37 C.F.R. §1.313(c)(2) or §1.313(c)(3), after the issue fee has been paid and information cited in this Information Disclosure Statement is to be considered in a Request for Continued Examination (RCE) or a Continuation application upon abandonment of the instant application and is accompanied by the attached Petition To Withdraw Application From Issue and fee pursuant to 37 C.F.R. §1.17(h).
- c. ☐ The fees due under 37 C.F.R. §§1.17(h) and 1.17(p) are paid as set forth in paragraph 11 below.
9. ☐ I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- ☐ I hereby certify that no item of information in the Information Disclosure Statement filed herewith was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
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<b>FORM PTO-1449</b>			<b>Attorney Docket:</b> 4024-4044US2		<b>Serial No.:</b> To Be Assigned	
<b>INFORMATION DISCLOSURE CITATION</b>			<b>Applicant:</b> John Trezza			
			<b>Filing Date:</b> September 30, 2003		<b>Group Art Unit:</b> To Be Assigned	
<b>U.S. PATENT DOCUMENTS</b>						
Examiner Initial	Patent Number	Publication Date	Name	Class	Sub-Class	Filing Date
	4,533,833	August 6, 1985	Copeland et al.			August 19, 1982
	5,100,480	March 31, 1992	Hayafuji			October 31, 1990
	5,266,794	November 30, 1993	Olbright et al.			January 21, 1992
	5,269,453	December 14, 1993	Melton et al.			October 8, 1992
	5,299,222	March 29, 1994	Shannon			March 11, 1992
	5,385,632	January 31, 1995	Goossen			June 25, 1993
	5,477,933	December 26, 1995	Nguyen			October 24, 1994
	5,485,480	January 16, 1996	Kleinerman			March 25, 1994
	5,488,504	January 30, 1996	Worchesky et al.			August 20, 1993
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	5,511,085	April 23, 1996	Marshall			September 2, 1994
	5,568,574	October 22, 1996	Tanquay et al.			June 12, 1995
	5,602,863	February 11, 1997	Itagaki			July 19, 1994
	5,636,052	June 3, 1997	Arney et al.			July 29, 1994
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	5,814,889	September 29, 1998	Gaul			June 5, 1995
	5,912,997	June 15, 1999	Bischel et al.			June 16, 1998
<b>Examiner</b>			<b>Date Considered</b>			
<b>EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.						

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	5,946,130	August 31, 1999	Rice			October 3, 1997
	5,991,479	November 23, 1999	Kleinerman			October 23, 1997
	6,005,262	December 21, 1999	Cunningham			January 27, 1998
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	6,136,623	October 24, 2000	Hofstetter et al.			May 6, 1998
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	6,184,066	February 6, 2001	Chino et al.			May 27, 1998
	6,215,114	April 10, 2001	Yagi et al.			September 23, 1998
	6,253,986	July 3, 2001	Brofman			September 22, 1999
	6,283,359	September 4, 2001	Brofman			August 23, 2000
	6,340,113	January 22, 2001	Avery et al.			January 8, 1999
	6,343,171	January 29, 2002	Yoshimura et al.			April 20, 1999
	6,423,561	July 23, 2002	Chino et al.			August 16, 2000
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	Pub. No. US2001 /00207939	Publication Date: September 13, 2001	Honda			March 9, 2001
	Pub. No. US2001/0038103 A1	Publication Date: November 8, 2001	Nitta et al.			July 2, 2001
	Pub. No. US2001 0081773	Publication Date: June 27, 2002	Inoue et al.			December 14, 2001
	Pub. No. US2002 0126364	Publication Date: September 2002	Miles			
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	Pub. No. US2002 /0154355A1	Publication Date: October 2002	Payne et al.			August 16, 2001

### FOREIGN PATENT DOCUMENTS

Examiner Initial	Patent Number	Publication Date	Country	Class	Sub-Class	Translation
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No

### OTHER DOCUMENTS (continued)

	Ahadian, J.F., et al., "Practical OEIC's Based on the Monolithic Integration of GaAs-InGap LED's with Commercial GaAs VLSI Electronics", IEEE Journal of Quantum Electronics, Vol. 34, No. 7, pages 1117-1123, July 1998.
	Alduino, A.C. et al., "Quasi-Planar Monolithic Integration of High-Speed VCSEL and Resonant Enhanced Photodetector Arrays", IEEE Photonics Technology Letters, Vol. 11, No. 5, pages 512-514, May 1999.
	Anderson, B., "Rapid Processing And Properties Evaluation Of Flip-Chip Underfills", Dexter Electronic Materials, 9 pages.
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	Geib, K.M. et al., "Monolithically Integrated VCSELs and Photodetectors for Microsystem Applications", IEEE, pages 27-28, 1998.
	Goodman, J. et al., "Optical Interconnections for VLSI Systems", Proceedings of the IEEE, Vol. 72, No. 7, pages 850-865, July 1984.
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	Goossen, K.W. et al., "GaAs MQW Modulators Integrated with Silicon CMOS", IEEE Photonics Technology Letters, Vol. 7, No. 4, pages 360-362, April 1995.
	Hibbs-Brenner, M.K., et al., "VCSEL/MSM Detector Smart Pixel Arrays", IEEE, pages 3 and 4, 1998.
	Lesser, M.P. et al., "Bump Bonded Back Illuminated CCDs", SPIE, Vol. 1656, pages 508-516, 1992.

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**OTHER DOCUMENTS (continued)**

	McLaren T. et al., "Assembly of VCSEL Based Smart Pixel Arrays", IEEE/LEOS Summer Topical Meeting: Smart Pixels, pages 49 and 50, August 1996.
	Nakahara, T., et al., "Hybrid Integration of Smart Pixels by Using Polyimide Bonding: Demonstration of a GaAs p-i-n Photodiode/CMOS Receiver", IEEE Journal Of Selected Topics In Quantum Electronics, pages 209-216, 1999.
	Ohsaki, T., "Electronic Packaging in the 1990's -A Perspective From Asia", IEEE Transactions On Components, Hybrids, And Manufacturing Technology, Vol. 14, No. 2, pages 254-261, June 1991.
	Pommerrenig, D.H. et al., "Hybrid silicon focal plane development: an update", SPIE, Vol. 267, pages 23-30, 1981.
	Pu, R. et al., "Comparison of Techniques for Bonding VCSELs Directly to ICs", SPIE Vol. 3490, pages 498-501, June 2005.
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Examiner	Date Considered
<b>EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	